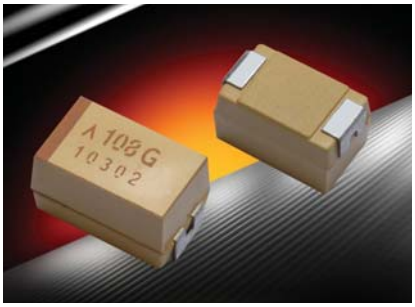
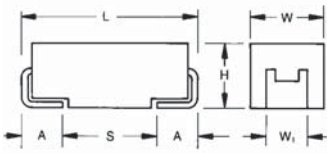
TCM Series

Tantalum Solid Electrolytic Chip Capacitors
Conductive Polymer Multianode





FEATURES

- Conductive polymer multianode
- Extremely Low ESR
- Reduced ignition failure mode
- 3x reflow 260°C compatible
- Volumetric efficiency
- High frequency capacitance retention

APPLICATIONS

- Telecommunication routers
- Basestations with high power DC/DCs

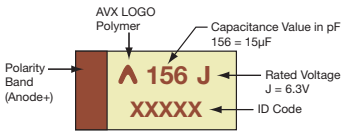
Elektra Award 2010

LEAD-FREE
LEAD-FREE COMPATIBLE COMPONENT

RoHS COMPLIANT

MARKING

E CASE



CASE DIMENSIONS: millimeters (inches)

Code	EIA Code	EIA Metric	L±0.20 (0.008)	W+0.20 (0.008) -0.10 (0.004)	H+0.20 (0.008) -0.10 (0.004)	W_1±0.20 (0.008)	A+0.30 (0.012) -0.20 (0.008)	S Min.
E	2917	7343-43	7.30 (0.287)	4.30 (0.169)	4.10 (0.162)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)
W_1 dimension applies to the termination width for A dimensional area only.								

HOW TO ORDER

TCM	E	108	M	004	R	0010
Type	**Case Size** See table above	**Capacitance Code** pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)	**Tolerance** M=±20%	**Rated DC Voltage** 004=4Vdc 006=6.3Vdc 010=10Vdc 035=35Vdc	**Packaging** R = Pure Tin 7" Reel S = Pure Tin 13" Reel	**ESR in mΩ**

TECHNICAL SPECIFICATIONS

Technical Data:		All technical data relate to an ambient temperature of +25°C				
Capacitance Range:		22 µF to 1000 µF				
Capacitance Tolerance:		±20%				
Leakage Current DCL:		0.1CV				
Rated Voltage (V_R)	≤ +85°C:	4	6.3	10	35	
Category Voltage (V_C)	≤ +105°C:	3.2	5	8	28	
Surge Voltage (V_S)	≤ +85°C:	5.2	8	13	46	
Surge Voltage (V_S)	≤ +105°C:	4	6	10	35	
Temperature Range:		-55ºC to +105ºC				
Reliability:		1% per 1000 hours at 85°C, V_R with 0.1Ω/V series impedance, 60% confidence level				

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CAPACITANCE AND RATED VOLTAGE RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated Voltage DC (V_R) to 85°C			
µF	Code	4V (G)	6.3V (J)	10V (A)	35V (V)
22	226				E(25)
33	336				
47	476				
68	686				
100	107				
150	157				
220	227				
330	337			E(10,15)	
470	477				
680	687		E(12)		
1000	108	E(10,12)			
1500	158				

Available Ratings, (ESR ratings in mOhms in brackets)

Engineering samples - please contact manufacturer

*Codes under development – subject to change

Note: Voltage ratings are minimum values. AVX reserves the right to supply higher ratings in the same case size, to the same reliability standards.

RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Cap (µF)	Rated Voltage (V)	Rated Temp. (°C)	Category Voltage (V)	Category Temp. (°C)	DCL (µA) Max.	DF % Max.	ESR Max. (mΩ) @ 100kHz	MSL	100kHz RMS Current (mA)			Product Category
											25°C	85°C	105°C	
4 Volt @ 85°C														
TCME108M004#0010	E	1000	4	85	3.2	105	400	8	10	3	6400	4500	2900	105°C
TCME108M004#0012	E	1000	4	85	3.2	105	400	8	12	3	5800	4100	2600	105°C
6.3 Volt @ 85°C														
TCME687M006#0012	E	680	6.3	85	5	105	408	8	12	3	5800	4100	2600	105°C
10 Volt @ 85°C														
TCME337M010#0010	E	330	10	85	8	105	330	8	10	3	6400	4500	2900	105°C
TCME337M010#0015	E	330	10	85	8	105	330	8	15	3	5200	3600	2300	105°C
35 Volt @ 85°C														
TCME226M035#0025	E	22	35	85	28	105	77	8	25	3	4000	2800	1800	105°C

Moinsture Sensitivity Level (MSL) is defined according to J-STD-020.

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5RMS with DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

ESR allowed to move up to 1.25 times catalog limit post mounting.

For typical weight and composition see page 162.

NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.

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Tantalum Solid Electrolytic Chip Capacitors Conductive Polymer Multianode

PRODUCT CATEGORY 105°C

<table>
<tr><th>TEST</th><th colspan="8">105°C series (Temperature range -55ºC to +105ºC)</th></tr>
<tr><th></th><th colspan="3">Condition</th><th colspan="5">Characteristics</th></tr>
<tr><td rowspan="5">Endurance</td><td colspan="3" rowspan="5">Determine after application of rated voltage for 2000 +48/-0 hours at 85±2ºC and then leaving 1-2 hours at room temperature. Also determine after application of 105ºC temperature, category voltage for 2000 +48/-0 hours and then leaving 1-2 hours at room temperature. Power supply impedance to be ≤3Ω.</td><td>Visual examination</td><td colspan="4">no visible damage</td></tr>
<tr><td>DCL</td><td colspan="4">1.25 x initial limit</td></tr>
<tr><td>ΔC/C</td><td colspan="4">within +20/-30% of initial value</td></tr>
<tr><td>DF</td><td colspan="4">1.5 x initial limit</td></tr>
<tr><td>ESR</td><td colspan="4">2 x initial limit</td></tr>
<tr><td rowspan="6">Storage Life</td><td colspan="3" rowspan="6">105ºC, 0V, 2000h</td><td>Visual examination</td><td colspan="4">no visible damage</td></tr>
<tr><td>DCL ($V_R \leq 75V$)</td><td colspan="4">1.25 x initial limit</td></tr>
<tr><td>DCL ($V_R > 75V$)</td><td colspan="4">2 x initial limit</td></tr>
<tr><td>ΔC/C</td><td colspan="4">within ±20% of initial value</td></tr>
<tr><td>DF</td><td colspan="4">1.5 x initial limit</td></tr>
<tr><td>ESR</td><td colspan="4">2 x initial limit</td></tr>
<tr><td rowspan="5">Humidity</td><td colspan="3" rowspan="5">Determine after storage without applied voltage at 65±2ºC and 95±2% relative humidity for 500 hours and then recovery 1- 2 hours at room temperature.</td><td>Visual examination</td><td colspan="4">no visible damage</td></tr>
<tr><td>DCL</td><td colspan="4">3 x initial limit</td></tr>
<tr><td>ΔC/C</td><td colspan="4">within +30/-20% of initial value</td></tr>
<tr><td>DF</td><td colspan="4">1.5 x initial limit</td></tr>
<tr><td>ESR</td><td colspan="4">2 x initial limit</td></tr>
<tr><td rowspan="7">Temperature Stability</td><td>Step</td><td>Temperature°C</td><td>Duration(min)</td><td></td><td>+20ºC</td><td>-55ºC</td><td>+20ºC</td><td>+85ºC</td><td>+105ºC</td><td>+20ºC</td></tr>
<tr><td>1</td><td>+20±2</td><td>15</td><td>DCL</td><td>IL*</td><td>n/a</td><td>IL*</td><td>10 x IL*</td><td>12.5xIL*</td><td>IL*</td></tr>
<tr><td>2</td><td>-55+0/-3</td><td>15</td><td>ΔC/C</td><td>n/a</td><td>+0/-20%</td><td>±5%</td><td>+20/-0%</td><td>+30/-0%</td><td>±5%</td></tr>
<tr><td>3</td><td>+20±2</td><td>15</td><td>DF</td><td>IL*</td><td>1.5 x IL*</td><td>IL*</td><td>1.5 x IL*</td><td>2xIL*</td><td>IL*</td></tr>
<tr><td>4</td><td>+85+3/-0</td><td>15</td><td colspan="6" rowspan="3"></td></tr>
<tr><td>5</td><td>+105+3/-0</td><td>15</td></tr>
<tr><td>6</td><td>+20±2</td><td>15</td></tr>
<tr><td rowspan="4">Surge Voltage</td><td colspan="3" rowspan="4">Test temperature: 105ºC+3/0ºC
Test voltage: Category voltage at 105ºC
Surge voltage: 1.3 x category voltage at 105ºC
Series protection resistance 1000±100Ω
Discharge resistance: 1000Ω
Number of cycles: 1000x
Cycle duration: 6 min; 30 sec charge,
5 min 30 sec discharge</td><td>Visual examination</td><td colspan="4">no visible damage</td></tr>
<tr><td>DCL</td><td colspan="4">initial limit</td></tr>
<tr><td>ΔC/C</td><td colspan="4">within +20/-30% of initial value</td></tr>
<tr><td>DF</td><td colspan="4">1.25 x initial limit</td></tr>
</table>

*Initial Limit

Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001
Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

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